UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,772	11/10/2003	Yedidia Atzmony	E30-066	4366

34021 7590 08/23/2007

GEORGE A. HERBSTER
40 BEACH STREET
SUITE 303
MANCHESTER, MA 01944

EXAMINER	
LOVEL, KIMBERLY M	

ART UNIT	PAPER NUMBER
2167	

MAIL DATE	DELIVERY MODE
08/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

mn

Office Action Summary	Application No.	Applicant(s)	
	10/705,772	ATZMONY ET AL.	
	Examiner	Art Unit	
	Kimberly Lovel	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-16 are rejected.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8 May 2007 has been entered.

Double Patenting

3. The terminal disclaimer filed on 23 March 2007 has been reviewed and is accepted. The terminal disclaimer has been recorded. Therefore the double patenting rejection is withdrawn.

Claim Objections

4. Claim 1 is objected to because of the following informalities:

The limitation C) iii) of **claim 1** should be c) ii).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 1-8** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The preamble of claims 1 and 5 recite "In a data processing system ..., a method ... comprising." Since the preamble of the claim mentions a system and a method, it is unclear whether the claims are directed towards a system or a method.

To allow for compact prosecution, the examiner will apply prior art to these claims as best understood, with the assumption that applicant will amend to overcome the stated 112 rejections.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. **Claims 1-8** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The preamble of **claims 1 and 5** recites "In a data processing system ..., a method ... comprising." The claim recites two statutory categories, and therefore, it is unclear whether the claim is directed towards a product or a process.

According to MPEP 2173.05(p) [R-5] Section II Product and Process in the Same Claim:

A single claim which claims both an apparatus and the method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph. *> IPXL Holdings v. Amazon.com, Inc., 430 F.2d 1377, 1384, 77 USPQ2d 1140, 1145 (Fed. Cir. 2005);<Ex parte Lyell, 17 USPQ2d 1548 (Bd. Pat. App. & Inter. 1990) *>(< claim directed to an automatic transmission workstand and the method * of using it * held ** ambiguous and properly rejected under 35 U.S.C. 112, second paragraph>)<. Such claims *>may< also be rejected under 35 U.S.C. 101 based on the theory that the claim is directed to neither a "process" nor a "machine," but rather embraces or overlaps two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only. Id. at 1551.

Since **claims 2-4 and 6-8** are dependent on claims 1 and 5, the claims are rejected on the same grounds as claim 1 and 5.

To allow for compact prosecution, the examiner will apply prior art to these claims as best understood, with the assumption that applicant will amend to overcome the stated 101 rejections.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-2, 5-6, 9-10 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 6,363,385 to Kedem et al (hereafter Kedem et al).

Referring to claim 1, Kedem et al disclose in a data processing system for connection in an open system network including a data storage facility [data storage facility 24] and a host device [host device] (see column 3, lines 25-26) for generating commands during the processing of a host application [Host App A 22 or Host App B 23] including a first command [copy command] with arguments identifying a source logical device and a destination logical device and a second command for initiating an ordered copying of data from the source logical device to the destination logical device (see abstract), wherein the data storage facility includes a host controller [controller 86] for receiving the commands, device controllers associated with each of said source [controller 87] and destination [controller 88] logical devices and means for interconnecting said controllers [system bus 25] (see Fig 1), a method for responding to the first and second commands comprising:

A) in response to the first command [copy command] from the host device, establishing in the data storage facility an operating environment phase by generating a data structure [extents track structure and data structure] (see column 4, lines 12-20, Fig 3 and Fig 4) including the addresses of the source and destination logical devices

[source device number, destination device number, record number of starting extent, record number of ending extent, cylinder address of destination device, head identifier of destination device] (see Fig 4), an operation data element for identifying the operation of the establishment phase and an operation status element designating a status of said establishment phase and data identifying each storage location in the source and destination logical devices (see column 8, lines 4-58), and

B) making the source and destination logical devices available for use by host applications (see column 4, lines 21-34),

C) in response to the second command [a message is sent to the host application indicating that the copying has occurred] from the host, testing the operation data and status elements and, in response to values of said operation and status elements that indicate the establishment phase has been completed, initiating an ordered copying of data from the source logical device to the destination logical device by: i) updating the operation data and status elements to indicate that copying is in progress (see column 2, lines 35-52 and column 4, lines 35-38) and, for each storage location in the source logical device:

a) copying data from each storage location in the identified source logical device to the identified destination logical device (see column 6, lines 13-19 – the tracks are considered to represent the *storage locations*), and

b) updating the status for each storage device to indicate the completion of each transfer from a storage location (see column 6, lines 26-27 – modification is considered to represent *updating*),

and

D) upon completion of said copying, updating the operation status element to indicate that the copying has been completed (see column 2, lines 51-52).

Kedem et al discloses a single File SMNF command performing the required functions. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to separate the single command into two commands, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Referring to claim 2, Kedem et al disclose a method as recited in claim 1 additionally comprising the step of deleting the operating environment after said copying has been completed for all the data in the source logical device (see column 5, lines 62-65 and column 6, lines 26-27 – after the copying is completed, the environment is terminated).

Referring to claim 5, Kedem et al disclose in a data processing system for connection in an open system network including a data storage facility [data storage facility 24] and a host device [host device] for generating commands during the processing of a host application [Host App A 22 or Host App B 23] including a first command to establish an operating environment for copying and a second command for initiating an ordered copying of the data from a source logical device comprising a plurality of contiguous data tracks on a physical disk storage device to a block of contiguous data tracks in a destination logical device wherein said source and logical device are components of the data storage facility that additionally includes a host

controller [controller 86] for receiving the commands and a device controller associated with each of said source [controller 87] and destination [controller 88] logical devices (see abstract and Fig 1), a method for responding to the first and second commands comprising:

A) in the data storage facility and in response to the first command [copy command], an operating environment by identifying, generating, in response to arguments in the first command from the host device, establishing initial locations for the source and destination logical devices [source device number, destination device number, record number of starting extent, record number of ending extent, cylinder address of destination device, head identifier of destination device] (see column 4, lines 12-20 and Fig 4), an operation data element identifying an establishment phase and an operation status element designating a status of said establishment step as in process and data about each storage location in the source and destination logical devices (see column 8, lines 4-58),

B) making the data in the source and destination logical devices available for use by host applications (see column 4, lines 21-34),

C) in response to the second command [a message is sent to the host application indicating that the copying has occurred] from the host device when the operation data and status elements indicate that the establishment has been completed, initiating an ordered copying of the data from the source logical device to the destination logical device on a track-by-track basis including, and for each data track in the source

logical device (see column 2, lines 35-52; column 4, lines 35-38; and column 6, lines 13-19), said ordered copying including:

i) copying data from a data track in the source logical device to a corresponding data track in the destination logical device (see column 6, lines 13-19), and

ii) updating the status for each storage device to indicate the completion of each transfer from a track in the source logical device (see column 6, lines 26-27 – modification is considered to represent *updating*),

and

D) upon completion of said copying, updating the operation of data and status elements to indicate that the copying has been completed (see column 2, lines 51-52).

Kedem et al discloses a single File SMNF command performing the required functions. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to separate the single command into two commands, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Referring to claim 6, Kedem et al disclose a method as recited in claim 5 additionally comprising the step of deleting the operating environment after said copying has been completed for all the data tracks in the source logical device (see column 5, lines 62-65 and column 6, lines 26-27 – after the copying is completed, the environment is terminated).

Referring to claim 9, Kedem et al disclose a data storage facility [data storage facility 24] that connects to a host device [host device] (see column 3, lines 25-26) in an open system network that generates commands during the processing of host applications [Host App A 22 or Host App B 23] wherein said data storage facility is adapted for copying data from a source logical device to a destination logical device in response to a predetermined first and second commands from a host application identifying said source and destination logical devices (see abstract) and wherein said data storage facility includes a host controller [controller 86] for receiving the commands and a device controller [controller 87 and 88] for each logical device, said facility comprising:

A) means responsive to the first predetermined command for establishing an operating environment phase by identifying said source and destination logical devices (see column 4, lines 12-20 – the copy command is considered to represent the *command*), said means including a copy data structure [extents track structure and data structure] (see column 4, lines 12-20, Fig 3 and Fig 4) that identifies the source and operation and operation status data elements that collectively identify an operating phase and state thereof as an establishment phase in progress and means for indicating the status of the copying in each source and destination logical devices (see column 5, line 59 – column 6, line 36 and column 8, lines 4-58),

B) means for enabling interaction of other commands with said source and destination logical devices (see column 4, lines 21-34), and

C) copy means, responsive to the second predetermined command [a message is sent to the host application indicating that the copying has occurred] if said operation and operation status data elements indicate the establishment phase is complete for initiating the copying of data from said source logical device to said destination logical device in an ordered manner (see column 4, lines 35-38) and updating the operating phase to indicate that copying is in progress (see column 2, lines 35-52 and column 4, lines 35-38),

D) means responsive to said copying means for updating the copying status to indicate data that has been transferred by said copying means (see column 6, lines 26-27 – modification is considered to represent *updating*), and

E) means for updating the operating status to indicate the copying has been completed (see column 2, lines 51-52).

Kedem et al discloses a single File SMNF command performing the required functions. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to separate the single command into two commands, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Referring to claim 10, Kedem et al disclose a data storage facility as recited in claim 9 additionally comprising means for deleting the operating environment after said copying means has been completed copying all the data in said source logical device (see column 5, lines 62-65 and column 6, lines 26-27 – after the copying is completed, the environment is terminated).

Referring to claim 13, Kedem et al disclose a data storage facility including logical storage devices, a first controller for receiving commands from a host and a device controller associated with each logical device, said data storage facility being adapted for connection in an open system network wherein the host device is adapted to generate a first command for establishing an operating environment for copying and a second command for initiating the copying of data, said first command including arguments identifying source and destination logical devices wherein each said logical device stores data in contiguous data tracks (see abstract and Fig 1), said facility comprising:

A) establishment means in the data storage facility responsive to the first command [copy command] for establishing an operating environment by generating initial locations [source device number, destination device number, record number of starting extent, record number of ending extent, cylinder address of destination device, head identifier of destination device] for said source and destination logical devices (see column 4, lines 12-20, Fig 3 and Fig 4),

B) means for enabling interaction of other commands with said source and destination logical devices (see column 4, lines 21-34), and

C) copying means for initiating, in response to the second command [a message is sent to the host application indicating that the copying has occurred] if the operation data and status elements indicate the establishment phase has been completed, an ordered copying the data from said source logical device to said destination logical

device in a track-by-track, manner (see column 2, lines 35-52; column 4, lines 35-38; and column 6, lines 13-19),

D) updating means responsive to said copying means for updating the status about each data track during each transfer of data in a data track (see column 6, lines 26-27 – modification is considered to represent *updating*), and

E) means responsive to the completion of the copying for updating the operating data and status elements to indicate the completed state of the copying (see column 2, lines 51-52).

Kedem et al discloses a single File SMNF command performing the required functions. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to separate the single command into two commands, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Referring to claim 14, Kedem et al disclose A data storage facility as recited in claim 13 additionally comprising means for deleting the operating environment after said copying means has been completed copying all the data in said source logical device (see column 5, lines 62-65 and column 6, lines 26-27 – after the copying is completed, the environment is terminated).

9. Claims 3-4, 7-8, 11-12 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 6,363,385 to Kedem et al as applied to claim 1 above, and further in view of US Patent No 6,757,797 to Kaiya et al (hereafter Kaiya et al).

Referring to claim 3, Kedem et al disclose a host application. However, Kedem et al fails to explicitly teach the further limitations wherein the host application generates as one command a write wherein during said copying request to transfer data from the host application an identified storage location in the source logical device, said method including the steps of: i) interrupting said ordered copying in response to the request, ii) copying data existing in the identified storage location in the source logical device to a corresponding storage location in the destination logical device, iii) re-enabling said ordered copying upon completion of said data copying, and iv) completing the data transfer to the identified storage location in the source logical device in response to the write request. Kaiya et al disclose a copying method between logical disks, including a host application generates as one command a write wherein during said copying request to transfer data from the host application an identified storage location in the source logical device (see column 7, lines 26-32), said method including the steps of:

i) interrupting said ordered copying in response to the request (see column 7, lines 33-37),

ii) copying data existing in the identified storage location in the source logical device to a corresponding storage location in the destination logical device (see column 7, lines 26-32),

iii) re-enabling said ordered copying upon completion of said data copying (see column 8, lines 11-28), and

iv) completing the data transfer to the identified storage location in the source logical device in response to the write request (see column 8, lines 25-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of Kaiya et al for interrupting the copying of data with the method of Kedem for transferring data. One would have been motivated to do so in order to decrease work stop time when copying data (Kaiya et al: see column 1, lines 35-41).

Referring to claim 4, Kedem et al disclose a host application. However, Kedem et al fails to explicitly teach the further limitations wherein during said copying a host application generates as one command one of read and write requests to transfer data between the host application and an identified storage location in the destination logical device, said method including the steps of: i) interrupting said ordered copying in response to the request, ii) copying data to the identified storage location in the destination logical device from a corresponding storage location in the source logical device, iii) re-enabling said ordered copying upon completion of said data copying, and iv) completing the transfer between the host application and the identified storage location in the destination logical device. Kaiya et al disclose a copying method between logical disks, including wherein during said copying a host application generates as one command one of read and write requests to transfer data between the host application and an identified storage location in the

destination logical device (see abstract, column 7, lines 26-32; and column 7, lines 56-59), said method including the steps of:

i) interrupting said ordered copying in response to the request (see column 7, lines 33-37),

ii) copying data to the identified storage location in the destination logical device from a corresponding storage location in the source logical device (see column 7, lines 26-32),

iii) re-enabling said ordered copying upon completion of said data copying (see column 8, lines 11-28), and

iv) completing the transfer between the host application and the identified storage location in the destination logical device (see column 8, lines 25-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of Kaiya et al for interrupting the copying of data with the method of Kedem for transferring data. One would have been motivated to do so in order to decrease work stop time when copying data (Kaiya et al: see column 1, lines 35-41).

Referring to claim 7, Kedem et al disclose a host application. However, Kedem et al fail to explicitly teach the further limitations wherein during said ordered copying a host application generates as another command a write request to transfer data to at least a portion of an identified data storage track in the source logical device, said method including the steps of: i) interrupting said ordered copying in response to the write request, ii) copying data existing in the identified data track in the source logical

device to a corresponding track in the destination logical device, iii) re-enabling said ordered copying upon completion of said data copying, and iv) completing the transfer of data associated with the write request to the identified data track in the source logical device. Kaiya et al disclose a copying method between logical disks (see abstract), including wherein during said ordered copying a host application generates as another command a write request to transfer data to at least a portion of an identified data storage track in the source logical device (see abstract and column 7, lines 26-32), said method including the steps of: i) interrupting said ordered copying in response to the write request (see column 7, lines 33-37), ii) copying data existing in the identified data track in the source logical device to a corresponding track in the destination logical device (see column 7, lines 26-32), iii) re-enabling said ordered copying upon completion of said data copying (see column 8, lines 11-28), and iv) completing the transfer of data associated with the write request to the identified data track in the source logical device (see column 8, lines 25-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of Kaiya et al for interrupting the copying of data with the method of Kedem for transferring data. One would have been motivated to do so in order to decrease work stop time when copying data (Kaiya et al: see column 1, lines 35-41).

Referring to claim 8, Kedem et al disclose a host application. However, Kedem et al fail to explicitly teach the further limitations wherein during said ordered copying a host application generates as one command one of read and write requests to transfer

data between the host application and at least a portion of an identified track in the destination logical device, said method including the steps of: i) interrupting said ordered copying in response to the request, ii) copying data to the identified data track in the destination storage location from a corresponding data track in the source logical device, iii) re-enabling said ordered copying upon completion of said data copying, and iv) completing the transfer between the host application and the identified data track in the destination logical device. Kaiya et al disclose a copying method between logical disks (see abstract), including wherein during said ordered copying a host application generates as one command one of read and write requests to transfer data between the host application and at least a portion of an identified track in the destination logical device (see abstract, column 7, lines 26-32; and column 7, lines 56-59), said method including the steps of: i) interrupting said ordered copying in response to the request (see column 7, lines 33-37), ii) copying data to the identified data track in the destination storage location from a corresponding data track in the source logical device (see column 7, lines 26-32), iii) re-enabling said ordered copying upon completion of said data copying (see column 8, lines 11-28), and iv) completing the transfer between the host application and the identified data track in the destination logical device (see column 8, lines 25-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of Kaiya et al for interrupting the copying of data with the method of Kedem for transferring data. One would have been motivated

to do so in order to decrease work stop time when copying data (Kaiya et al: see column 1, lines 35-41).

Referring to claim 11, Kedem et al disclose a host application. However, Kedem et al fail to explicitly teach the further limitations wherein during the ordered copying a host application generates as another command a write request to transfer data from the host application to identified storage location in said source logical device, said copying means including: i) a copy program, ii) means for operating said copy program in the ordered copying mode, iii) means for interrupting said ordered copying operating means in response to any read and write request to a storage location in said destination logical device to enable said copy program to copy data from a corresponding storage location in said source logical device to the identified storage location in the destination logical device, iv) means for re-enabling said ordered copying upon completion of said data copying, and v) means for completing the data transfer to said identified storage location in said source logical device in response to the write request. Kaiya et al disclose a copying method between logical disks (see abstract), including wherein during the ordered copying a host application generates as another command a write request to transfer data from the host application to identified storage location in said source logical device (see abstract), said copying means including: i) a copy program (see abstract), ii) means for operating said copy program in the ordered copying mode (see column 4, lines 35-38), iii) means for interrupting said ordered copying operating means in response to any read and write request to a storage location in said destination logical device to enable said copy program to copy data from

a corresponding storage location in said source logical device to the identified storage location in the destination logical device (see column 7, lines 33-37 and lines 56-59), iv) means for re-enabling said ordered copying upon completion of said data copying (see column 8, lines 1-28), and v) means for completing the data transfer to said identified storage location in said source logical device in response to the write request (see column 8, lines 25-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of Kaiya et al for interrupting the copying of data with the method of Kedem for transferring data. One would have been motivated to do so in order to decrease work stop time when copying data (Kaiya et al: see column 1, lines 35-41).

Referring to claim 12, Kedem et al disclose a host application. However, Kedem et al fail to explicitly teach the further limitations wherein during said ordered copying a host application generates as one command one of read and write requests to transfer data between the host application and an identified location said destination logical device, said ordered copying means including: i) a copy program, ii) means for operating said copy program in the ordered copying mode, iii) means for interrupting said ordered copying operating means in response to any read and write request to a storage location in said destination logical device to enable said copy program to copy data from a corresponding storage location in said source logical device to the identified storage location in the destination logical device, iv) means for re-enabling said ordered copying operating means upon completion of said data copying, and v) means for

completing the transfer between host application and said identified storage location in said destination logical device. Kaiya et al disclose a copying method between logical disks (see abstract), including wherein during the ordered copying a host application generates as one command of read and write requests to transfer data between the host application an identified location in said destination (see abstract), said ordered copying means including: i) a copy program (see abstract), ii) means for operating said copy program in the ordered copying mode (see column 4, lines 35-38), iii) means for interrupting said ordered copying operating means in response to any read and write request to a storage location in said destination logical device to enable said copy program to copy data from a corresponding storage location in said source logical device to the identified storage location in the destination logical device (see column 7, lines 33-37 and lines 56-59), iv) means for re-enabling said ordered copying operating means upon completion of said data copying (see column 8, lines 1--28), and v) means for completing the transfer between the host application and said identified storage location in said destination logical device (see column 8, lines 25-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of Kaiya et al for interrupting the copying of data with the method of Kedem for transferring data. One would have been motivated to do so in order to decrease work stop time when copying data (Kaiya et al: see column 1, lines 35-41).

Referring to claim 15, Kedem et al disclose a host application. However, Kedem et al fail to explicitly teach the further limitations wherein during said ordered

copying a host application generates as one command a write request to transfer data from the host application to an identified data track in said source logical device, said copying means including: i) a copy program, ii) means for operating said copy program in the ordered, track-by-track manner, iii) means for interrupting said ordered copying operating means in response to the write request and enabling said copy program to copy data in said identified data track in said source logical device to a corresponding data track in said destination logical device, iv) means for re-enabling said ordered copying upon completion of said data copying, and v) means for completing the transfer of data associated with the write request to said identified data track in said source logical device. Kaiya et al disclose a copying method between logical disks (see abstract), including wherein during said ordered copying a host application generates as one command a write request to transfer data from the host application to identified data track in said source logical device (see abstract), said copying means including: i) a copy program (see abstract), ii) means for operating said copy program in the ordered track-by-track manner (see column 4, lines 35-38), iii) means for interrupting said ordered copying operating means in response to the write request and enabling said copy program to copy data in said identified data track in said source logical device to a corresponding data track in said destination logical device (see column 7, lines 33-37 and lines 56-59), iv) means for re-enabling said ordered copying upon completion of said data copying (see column 8, lines 1-28), and v) means for completing the transfer of data associated with the write request to said identified data track in said source logical device (see column 8, lines 25-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of Kaiya et al for interrupting the copying of data with the method of Kedem for transferring data. One would have been motivated to do so in order to decrease work stop time when copying data (Kaiya et al: see column 1, lines 35-41).

Referring to claim 16, Kedem et al disclose a host application. However, Kedem et al fail to explicitly teach the further limitations wherein during said ordered copying a host application generates as another command one of read and write requests to transfer data between the host application and an identified data track in said destination logical device, said ordered copying means including: i) a copy program, ii) means for operating said copy program in the ordered, track-by-track, manner, iii) means for interrupting said ordered copying in response to one of the read and write requests to a data track in said destination logical device thereby to enable said copy program to copy the data in said corresponding data track of said source logical device to said identified data track in said destination logical device, iv) means for re-enabling said ordered copying upon completion of said data copying, and v) means for completing the transfer between the host application and said identified data track in said destination logical device, and vi) means for completing the transfer between the host application and the identified destination storage location. Kaiya et al disclose a copying method between logical disks (see abstract), including wherein during the ordered copying a host application generates as another command one of read and write requests to transfer data between the host application an identified data

track in said destination (see abstract), said ordered copying means including: i) a copy program (see abstract), ii) means for operating said copy program in the ordered track-by-track, manner (see column 4, lines 35-38), iii) means for interrupting said ordered copying in response to one of the read and write requests to a data track in said destination logical device thereby to enable said copy program to copy data in said corresponding data track of said source logical device to said identified data track in said destination logical device (see column 7, lines 33-37 and lines 56-59), iv) means for re-enabling said ordered copying operating means upon completion of said data copying (see column 8, lines 1--28), v) means for completing the transfer between the host application and said identified data track in said destination logical device (see column 8, lines 25-28), and vi) means for completing the transfer between the host application and the identified destination storage location (see column 8, lines 25-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the method of Kaiya et al for interrupting the copying of data with the method of Kedem for transferring data. One would have been motivated to do so in order to decrease work stop time when copying data (Kaiya et al: see column 1, lines 35-41).

Response to Arguments

10. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Lovel whose telephone number is (571) 272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly Lovel
Examiner
Art Unit 2167

19 August 2007
kml

JOHN COTTINGHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100